

the Aquifoliaceae; yet, the Hippocrateaceae is segregated from the very closely related Celastraceae, *Leea* from the Vitaceae, *Sonneratia* from the Lythraceae, *Barringtonia* from the Lecythidaceae, Vacciniaceae from the Ericaceae, and *Brunonia* from the Goodeniaceae. The monocot families are very narrowly and unrealistically defined, following the Hutchinsonian tradition. I would treat the 223 families listed by Clifford and Ludlow as 201 valid families, including 175 indigenous, 6 naturalized, and 20 merely cultivated in Queensland.

Larger categories are greatly inflated. The class Angiospermae is, for example, elevated here to divisional status and called the Magnoliophyta. Similarly the monocot and dicot subclasses are elevated to class status as the Magnoliatae and Liliatae. This gross taxonomic inflation seems entirely unwarranted by the morphological facts. The Angiospermae appear to be no more distinct from each class of gymnosperms, like the Cordaitae, Cycadae, Ginkgoae, Coniferae, or Gnetae, than each of these is from one another in the quite adequate division Tracheophyta, the vascular plants.

I have noted few actual errors or serious omissions, either in fact or in typography. A few family names do not follow exactly the list of conserved family names in the International Code. A very few genera, mostly naturalized, have been omitted, and a few native genera appear to be placed in the wrong families. The volume is well-bound and attractively printed. On balance, this small book should find much use in Queensland even though I feel it falls far short of what it could have been with little extra effort or expenditure.—ROBERT F. THORNE, Rancho Santa Ana Botanic Garden, Claremont, California 91711.

*Arctic Adaptations in Plants.* By D. B. O. SAVILLE. 81 pp. Monograph no. 6, Research Branch, Canada Department of Agriculture. 1972. No price.

Douglas Saville is a member of the Plant Research Institute of the Canada Department of Agriculture, but he is the living answer to the mythical stereotype of a government scientist with tunnel vision. He has written learned papers on a very wide range of topics from the aerodynamics of the loon's wing to the taxonomy and evolution of the smut and rust fungi (with more than a pause among the flowering plants). Biogeography is one of his strong suits and his studies have carried him all over the Canadian Arctic and beyond. Consequently, he is the ideal author for this survey of arctic adaptations in plants—flowering plants, vascular cryptogams, bryophytes, lichens, algae, and his specially-beloved fungi.

Morphological, physiological, and reproductive aspects of adaptation are treated in relation to winter and summer survival through the vicissitudes of temperature, strong winds and snow abrasion, desiccation, low nitrogen supply, extremes of photoperiod, and the shortness of the growing season that afflict plants occupying arctic habitats. Simplicity of ecosystems and the low density of plant cover create their own special problems for solution. All of these matters are surveyed with an easy writing style and a degree of coverage that, if not exhaustive, is satisfying because it is a distillate from the comprehensive study of the subject by the author. This small book is essential reading for evolutionists and ecologists, even those who will never visit the arctic except vicariously through works such as this. It can be obtained from the Information Division, Canada Department of Agriculture, Ottawa, K1A 0C7.—HERBERT G. BAKER, Department of Botany, University of California, Berkeley 94720.